REMARKS

This Response, submitted in reply to the Office Action dated June 29, 2006, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-12 are all the claims pending in the application. Claims 3, 4, 6, 8, 9, 11 and 12 have been deemed allowable.

I. Rejection of claims 1, 2, 5, and 7 under 35 U.S.C. § 103

Claims 1, 2, 5, and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art (hereinafter "APA") of the instant application in view of Mukherjee (U.S. Patent No. 6,226,322; hereinafter "Mukherjee").

Claim 1 recites, *inter alia*:

> "...wherein said means for producing carrier constellation information is adapted to produce for at least one respective carrier subset a set of parameter values from which constellations of all carriers in said at least one respective carrier subset can be retrieved through interpolation..."

The Examiner continues to assert that the APA teaches all the aspects of the claim except for interpolation and the Examiner therefore cites Mukherjee to cure this deficiency.

However, contrary to the Examiner's assertion, the APA does not teach the aspects of this claim.

As discussed on page 1, line 7 to page 2, line 7 of the Applicant's specification, ANSI T1.413-1998 discloses in paragraph 9.8.13 that the central office DSL transceiver produces bits and gains information (i.e. constellation information) for the ADSL upstream carriers and

transmits this bits and gains information to the remote ADSL transceiver encapsulated in a message named C-B&G. The constellation information produced and transmitted comprises 16 bits. Upon receipt by the ADSL transceiver, the bits and gains information is used to control the upstream data modulator and the ADSL transceiver has to produce similar bits and gains information for the ADSL downstream carriers. In an ADSL system, 256 carriers or tones are used in a frequency division duplexed way to convey upstream and downstream data. The aggregate constellation information to be transferred during the initialization procedure is 512 bytes long which delays the initialization procedure. Therefore, the prior art transmits all of the constellation information at a given time resulting in delays in the initialization procedure.

On the other hand, the exemplary embodiment of the present invention avoids the long duration of transferring constellation information by grouping the carriers into subsets and transmitting for each subset only a limited set of parameter values as constellation information. The constellation of each carrier in the subset can consequently be derived through interpolation.

Therefore, contrary to the Examiner's assertion, in the APA, the constellation information are **not** grouped in a subset and are all transferred as constellation information, consequently leading to long initialization times. Assuming the bits and gains information comprises a carrier subset as suggested by the Examiner on page 3 of the Office Action, it appears that the bits and gains information (e.g. b_1, g_1) was already cited by the Examiner's for teaching the claimed parameter values. If the Examiner is attempting to cite the bits and gains information (e.g. b_1, g_1) for teaching both the claimed parameter values and the carrier subset, the Examiner cannot cite the same aspect of the reference for teaching distinctly different aspects of the claim.

Assuming the bits and gains information (e.g. b_1, g_1) teaches the claimed carrier subset, the Examiner has not established where the APA teaches a set of parameter values (comprising a first number of bits and a first gain value, see Applicant's claim 2) from which constellations of all carriers in said at least one respective carrier subset can be retrieved.

Moreover, there is no need for a carrier subset in the APA. All of the constellation information in the APA is transmitted at a given time. Consequently, there is no need to group the constellation information into a subset. Such a modification to the APA is clearly a result of impermissible hindsight upon viewing the Applicant's invention.

The Examiner asserts that Mukherjee Fig. 4, element 44C, Fig. 9, element 96 and col. 22, lines 27-34 discloses "a set of parameter values from which constellations of all carriers in said **at least one respective carrier subset can be retrieved through interpolation.**" However, the respective Figures and column and lines cited by the Examiner disclose the use of interpolation to obtain a sample input rate of a digital transceiver. See col. 12, lines 27-31; col. 22, lines 32-35. Moreover, the interpolation of Mukherjee is performed in order to increase a sample rate so as to provide an oversampled digital-to-analog conversion downstream. See col. 12, lines 23-40. Further, col. 22, lines 33-35 of Mukherjee discloses that the interpolation filter 96 is not always utilized depending upon the desired sample input rate of a digital transceiver 10.

Therefore, in view of the foregoing, it is apparent that the interpolation of Mukherjee is not performed in order to retrieve the constellations of all carriers in a carrier subset, as claimed. There is no teaching or suggestion that parameter values for all carriers in a carrier subset can be retrieved through interpolation, particularly since the interpolation filter of Mukherjee is not always necessary.

Assuming *arguendo* the bit values (b_i) and the gain values (g_i) could be considered a subset and assuming Mukherjee discloses the claimed interpolation, there would be no need to retrieve parameter values for carriers by interpolation in the APA since in the APA, the parameter values are not grouped into subsets and all of the parameter values are individually transferred. If interpolation was applied to the bit values and gain values of the APA (carrier subset as asserted by the Examiner), this would appear to result in the creation of unnecessary information, further evidencing that the Examiner's reasoning is merely a result of impermissible hindsight.

Consequently, the combination of Mukherjee with the APA is not obvious and it is apparent that the Examiner's reasoning is merely based upon hindsight upon viewing the Applicant's invention.

For at least the above reasons, claim 1 and its dependent claims should be deemed allowable. To the extent claim 7 recites similar elements, claim 7 and its dependent claims should be deemed allowable for at least the same reasons.

II. Rejection of claim 10 under 35 U.S.C. § 103

Claim 10 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over APA of the instant application in view of Mukherjee as applied to claim 7 above, and further in view of Gultekin et al. (U.S. Patent No. 6,215,793). Claim 10 should be deemed allowable by virtue of its dependency to claim 7 for the reasons set forth above. Moreover, Gultekin does not cure deficiencies of the APA in view of Mukherjee.

III. Allowable Subject Matter

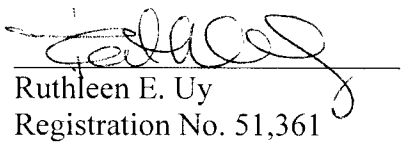
Claims 3, 4, 6, 8, 9, 11, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. At the present time, Applicant has not rewritten claims 3, 4, 6, 8, 9, 11, and 13 in independent form since Applicant believes claims 3, 4, 6, 8, 9, 11, and 13 should be deemed allowable, without amendment, by virtue of their dependency to claims 1 and 7 for at least the reasons set forth above.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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